

BRIEFER ARTICLES

A CORN-POLLINATOR

(WITH ONE FIGURE)

In some corn-breeding experiments conducted during the summer of 1918 at Col. GEORGE FABYAN'S Riverbank Research Laboratories, Geneva, Illinois, the writer employed a simple pollination apparatus which has proved very satisfactory. An ordinary thistle tube is filed off 3-4 inches from the bulb and given a bend of 90° (fig. 1, *B*). The

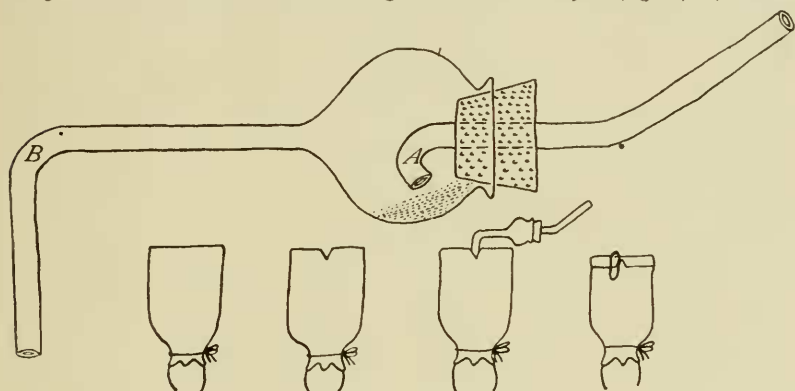


FIG. 1.—Corn-pollinator: description in text

bulb is fitted with a one-hole rubber stopper, through which is passed a glass tube with two bends (fig. 1, *A*). Silks and tassels are covered, as is customary, with manila bags of the ordinary type (single acute angle at closed end). The stopper is removed from the pollinator and into the bulb is shaken an appropriate amount of pollen from the tassel-bag. A small notch is then cut in the closed end of the silks-bag. Through this aperture the thistle-tube end of the pollinator is immediately inserted; the operator blows at the other end of the apparatus; and a dense cloud of pollen is discharged over the silks. The end of the silks-bag is then folded over and held secure with a wire clip (see the series in fig. 1). Thus pollination can readily be repeated, although this is quite unnecessary if the original pollination was made at the time of good pollen and receptive silks. Repetition may be desired, however,

in experiments on the condition of pollen grains themselves or the effect of diverse pollination.

Such an apparatus has three fundamental advantages over any other method that the writer has seen described: (1) foreign pollen is absolutely eliminated, so far as the writer's experience goes; (2) the cloud of pollen is in violent circulation when it strikes the silks, insuring rather complete pollination, always provided that the pollen and silks are both in good condition; (3) it is a relatively "fool-proof" method, so that pollination can be allotted among unskilled assistants.

Certain disadvantages may be considered. (1) *Expense*.—The apparatus can be made up for about 15 cents, and the number of pollinators need not be great. With a given "load" of pollen 4 or more ears may be pollinated. Repeated loadings may be made as long as pollen from a given tassel is desired. The pollinator is then opened, easily washed in 95 per cent alcohol, wiped out with cotton, and dried within 20 minutes, provided there is standing alcohol in none of the parts. The writer usually used about 20 pollinators and then washed them all. (2) *Breakage*.—This is not a problem provided the bent end at *A* (fig. 1) is not long enough to strike the side of the bulb when the stopper is forced in. (3) *Clogging*.—If the bend at *B* (fig. 1) is a clean one, even fragments of tassels contained in the pollen load will pass through readily. This also will depend on the bore of the thistle tube, but the writer encountered practically no difficulties of this sort. (4) *Loading*.—This is the only aggravating feature of the method. It is not a problem provided the operator can afford to sacrifice the tassel, as the writer usually did. The severed tassel is then shaken within the bag, from which pollen is readily poured into the pollinator. Frequently, however, it is desirable to save the tassel. In that case the operator may pull the bag off the tassel and replace after loading. This obviously endangers a wholesale loss of pollen and an exposure of the tassel for a moment. A much better method is merely to loosen the string around the tassel-bag and load the pollinator from one corner of the bag's mouth. This method was employed with considerable success, but it is rather awkward at best and impossible for 12-foot corn. A much more clean-cut method would be to save pollen (rather than tassels) in dry phials, but this multiplies apparatus. With all the drawbacks of loading, however, even an unskilled operator finds little difficulty in using this corn-pollinator.—MERLE C. COULTER, *University of Chicago*.